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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,654

02/07/2008

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CXR103.ORD

9617

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02/18/2009

EXAMINER

THOMAS, COURTNEY D

ART UNIT

PAPER NUMBER

2882

MAIL DATE

DELIVERY MODE

02/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,654	MORTOR ET AL.	
	Examiner	Art Unit	
	Courtney Thomas	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-8,10 and 11 is/are rejected.
- 7) ☒ Claim(s) 5 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/21/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 01/29/09 has been entered.

Allowable Subject Matter

2. The indicated allowability of claims 1-11 is withdrawn in view of the newly discovered reference(s) to Salasoo (U.S. Patent 5,987,097). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 7, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Salasoo (U.S. Patent 5,987,097).

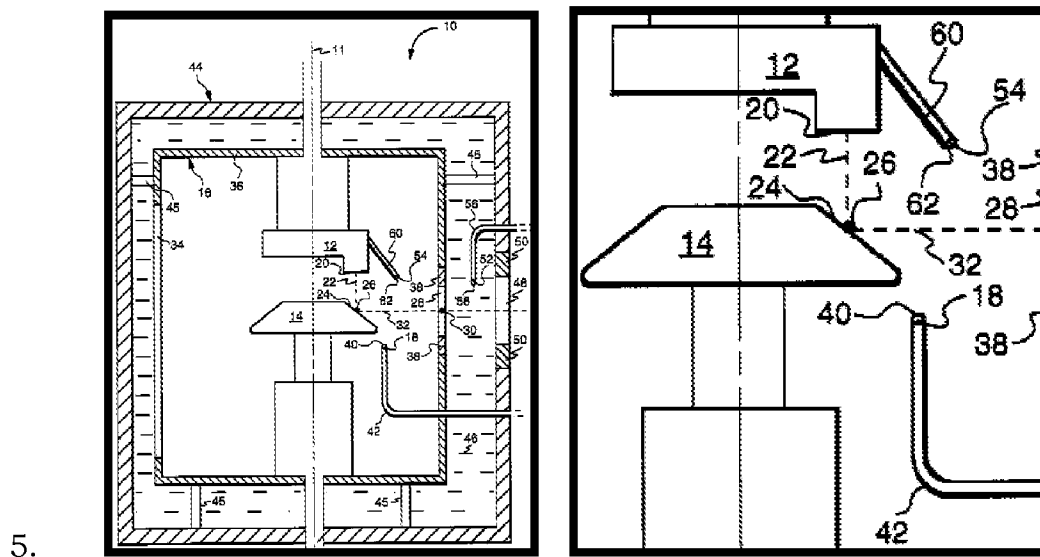


Fig. 1 (& magnified view) – X-ray tube- U.S. Patent 5,987,097 to Salasoo

6. **As per claim 1**, Salasoo discloses an X-ray tube comprising: a cathode (12); an anode (14) and a retardation electrode (18) held at a negative potential with respect to the anode (col. 3:30-36) to produce an electric field between the anode (14) and retardation electrode (18); wherein retardation electrode (18) is located on an opposite side of the anode (14) to the cathode (12). [Examiner note: electrodes 54 and 58 are also taught to assist in the reduction of heat within the tube.]

7. **As per claim 2**, Salasoo discloses an X-ray tube wherein the retardation electrode (18) is held at a positive potential with respect to the cathode (12) – (col. 3:40-43).

8. **As per claims 3-4**, Salasoo discloses an X-ray tube wherein the retardation electrode (18) forms part of an electrical circuit and its potential is substantially constant (col. 3:30-47).

9. **As per claims 6-7**, Salasoo discloses an X-ray tube further comprising a housing (44, 16) enclosing the cathode (12) and anode (14), wherein at least part of the housing (44, 16) forms the retardation electrode (18, 58); and wherein the retardation electrode (18, 58) is located between the anode and the housing.

10. **As per claims 10-11**, Salasoo discloses an X-ray tube wherein the tube further defines a window through which X-rays are emitted (48) and wherein the retardation electrode (18, 58) extends between the anode (14) and the window (48).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salasoo (U.S. Patent 5,987,097).

13. **As per claim 8**, Salasoo discloses an X-ray tube as recited in claim 1, but fails to explicitly disclose an anode supported on a backing of lower atomic number material than the anode. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the tube of Salasoo such that it incorporated an anode supported on a backing of lower

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atomic number material than the anode. One would have been motivated to make such a modification for the purpose of removing heat generated by impinging electrons on the anode surface through the backing of a low atomic number material, such as carbon, as is routinely practiced in the X-ray art.

Allowable Subject Matter

14. Claims 5 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. As per claim 5, the examiner found no reference in the prior art that disclosed or made obvious an X-ray tube wherein the retardation electrode is electrically connected to the anode via a resistor, wherein current flowing through the resistor determines the potential of the retardation electrode with respect to the anode.

16. As per claim 9, the examiner found no reference in the prior art that disclosed or made obvious an X-ray tube wherein the anode has a thickness of 5 microns or less.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Courtney Thomas/

Courtney Thomas
Primary Examiner
Art Unit 2882